

Actuarial Valuation Data by Year

Teachers Retirement Association

(TRA)

	FY2018	FY2017	FY2016	FY2015	FY2014	FY2013	FY2012
Membership							
Active Members	82,495	81,811	80,530	79,406	77,243	76,765	76,649
Service Retirees	60,128	58,989	57,891	56,589	53,774	52,331	50,780
Disabilitants	500	517	521	571	563	568	591
Survivors	5,476	5,268	5,091	4,826	4,472	4,269	4,054
Deferred Retirees	14,936	14,030	13,680	13,314	12,907	12,614	12,201
Nonvested Former Members	<u>34,375</u>	<u>33,344</u>	<u>31,850</u>	<u>31,026</u>	<u>29,984</u>	<u>28,881</u>	<u>27,591</u>
Total Membership	197,910	193,959	189,563	185,732	178,943	175,428	171,866
Funded Status							
Accrued Liability	\$28,643,023,000	\$27,427,702,000	\$26,716,216,000	\$25,562,155,000	\$24,528,506,000	\$23,418,629,000	\$23,024,505,000
Current Assets	<u>\$22,022,842,000</u>	<u>\$21,062,789,000</u>	<u>\$20,194,279,000</u>	<u>\$19,696,893,000</u>	<u>\$18,181,932,000</u>	<u>\$16,774,626,000</u>	<u>\$16,805,077,000</u>
Unfunded Accrued Liability	\$6,620,181,000	\$6,364,913,000	\$6,521,937,000	\$5,865,262,000	\$6,346,574,000	\$6,644,003,000	\$6,219,428,000
Funding Ratio	76.89%	76.79%	75.59%	77.05%	74.13%	71.63%	72.99%
Financing Requirements							
Covered Payroll	\$5,173,114,000	\$5,043,499,000	\$4,858,593,000	\$4,672,229,000	\$4,353,988,000	\$4,205,399,000	\$4,146,325,000
Benefits Payable	\$1,818,814,000	\$1,765,573,000	\$1,716,733,000	\$1,630,157,000	\$1,580,120,000	\$1,521,477,000	\$1,485,527,000
Normal Cost	9.16% \$473,873,000	8.77% \$442,340,000	8.79% \$427,101,000	8.57% \$400,448,000	8.70% \$378,843,000	8.40% \$353,335,000	8.53% \$353,796,000
Administrative Expenses	0.32% \$16,554,000	0.25% \$12,609,000	0.23% \$11,175,000	0.23% \$10,746,000	0.22% \$9,579,000	0.23% \$9,672,000	0.24% \$9,951,000
Amortiz. of Unfunded Liab.^	<u>7.70%</u> <u>\$398,330,000</u>	<u>9.41%</u> <u>\$474,593,000</u>	<u>9.70%</u> <u>\$471,284,000</u>	<u>9.07%</u> <u>\$423,771,000</u>	<u>10.23%</u> <u>\$445,413,000</u>	<u>10.78%</u> <u>\$453,342,000</u>	<u>9.98%</u> <u>\$413,803,000</u>
Total Requirements	17.18% \$888,757,000	18.43% \$929,542,000	18.72% \$909,560,000	17.87% \$834,965,000	19.15% \$833,835,000	19.41% \$816,349,000	18.75% \$777,550,000
Employee Contributions	7.50% \$387,991,000	7.50% \$378,272,000	7.50% \$364,408,000	7.50% \$350,438,000	7.50% \$326,573,000	7.00% \$294,416,000	6.50% \$269,572,000
Employer Contributions	7.91% \$409,208,000	7.72% \$389,379,000	7.70% \$374,140,000	7.70% \$359,806,000	7.70% \$335,309,000	7.19% \$302,454,000	6.69% \$277,520,000
Employer Add'l Cont.	0.04% \$2,250,000	0.04% \$2,250,000	0.05% \$2,250,000	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Direct State Funding	0.60% \$31,087,000	0.62% \$31,087,000	0.64% \$31,087,000	0.76% \$35,378,000	0.48% \$21,001,000	0.47% \$19,954,000	0.52% \$21,727,000
Other Govt. Funding	0.04% \$2,250,000	0.04% \$2,250,000	0.05% \$2,250,000	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Administrative Assessment	<u>0.00%</u> <u>\$0</u>						
Total Contributions	16.10% \$832,786,000	15.93% \$803,238,000	15.94% \$774,135,000	15.96% \$745,622,000	15.68% \$682,883,000	14.67% \$616,824,000	13.71% \$568,819,000
Total Requirements	17.18% \$888,757,000	18.43% \$929,542,000	18.72% \$909,560,000	17.87% \$834,965,000	19.15% \$833,835,000	19.41% \$816,349,000	18.75% \$777,550,000
Total Contributions	<u>16.10%</u> <u>\$832,786,000</u>	<u>15.93%</u> <u>\$803,238,000</u>	<u>15.94%</u> <u>\$774,135,000</u>	<u>15.96%</u> <u>\$745,622,000</u>	<u>15.68%</u> <u>\$682,883,000</u>	<u>14.67%</u> <u>\$616,824,000</u>	<u>13.71%</u> <u>\$568,819,000</u>
Sufficiency/(Deficiency)	(1.08%) (\$55,971,000)	(2.50%) (\$126,304,000)	(2.78%) (\$135,425,000)	(1.91%) (\$89,343,000)	(3.47%) (\$150,952,000)	(4.74%) (\$199,525,000)	(5.04%) (\$208,731,000)
Amortization Target Date	2048	2039	2039	2037	2037	2037	2037
Actuary	Cavanaugh Macdonald						

^Amortization of the unfunded actuarial accrued liability (UAAL) to the amortization target date.

The information set forth in this report is a compilation of data taken from actuarial valuation reports prepared by each plan's actuary. The LCPR or its staff do not warrant or guarantee its accuracy, reliability or completeness. LCPR staff compiles this information to provide a single source for similar data on the plans, for the sake of convenience and ease of comparison, for use by Minnesota legislators and, secondarily, the public. This information should not be relied on for any "official" purpose. Please refer to the plans' actuarial valuation reports, available on the LCPR website at www.lcpr.leg.mn, for the most accurate, complete and detailed information.

Actuarial Valuation Data by Year

Teachers Retirement Association

(TRA)

	FY2011		FY2010		FY2009		FY2008		FY2007		FY2006		FY2005	
Membership														
Active Members		76,755		77,356		77,786		76,515		77,694		79,164		74,552
Service Retirees		49,079		47,517		46,108		43,041		42,679		41,009		35,779
Disabilitants		602		654		624		641		636		630		581
Survivors		3,856		3,682		3,476		3,299		3,223		3,044		2,597
Deferred Retirees		13,237		12,756		12,490		12,168		12,636		11,773		9,880
Nonvested Former Members		<u>25,196</u>		<u>23,651</u>		<u>23,073</u>		<u>22,115</u>		<u>22,914</u>		<u>21,956</u>		<u>19,151</u>
Total Membership		168,725		165,616		163,557		157,779		159,782		157,576		142,540
Funded Status														
Accrued Liability		\$22,171,493,000		\$22,081,634,000		\$23,114,802,000		\$22,230,841,000		\$21,470,314,497		\$20,679,110,879		\$18,021,410,061
Current Assets		<u>\$17,132,383,000</u>		<u>\$17,323,146,000</u>		<u>\$17,882,408,000</u>		<u>\$18,226,985,000</u>		<u>\$18,794,389,076</u>		<u>\$19,035,611,839</u>		<u>\$17,752,917,313</u>
Unfunded Accrued Liability		\$5,039,110,000		\$4,758,488,000		\$5,232,394,000		\$4,003,856,000		\$2,675,925,421		\$1,643,499,040		\$268,492,748
Funding Ratio	77.27%		78.45%		77.36%		81.99%		87.54%		92.05%		98.51%	
Financing Requirements														
Covered Payroll		\$4,106,922,000		\$4,047,547,000		\$4,049,217,000		\$3,846,190,000		\$3,814,373,772		\$3,707,900,584		\$3,389,066,754
Benefits Payable		\$1,459,550,000		\$1,421,382,000		\$1,381,366,000		\$1,330,837,000		\$1,273,093,384		\$1,224,212,024		\$1,048,440,524
Normal Cost	8.17%	\$335,649,000	8.36%	\$338,474,000	8.88%	\$359,579,000	8.77%	\$337,281,000	9.37%	\$357,343,265	9.43%	\$349,678,399	8.02%	\$271,801,325
Administrative Expenses	0.24%	\$9,857,000	0.24%	\$9,714,000	0.28%	\$11,338,000	0.27%	\$10,385,000	0.29%	\$11,061,684	0.33%	\$12,236,072	0.34%	\$11,522,827
Amortiz. of Unfunded Liab.^	<u>8.16%</u>	<u>\$335,125,000</u>	<u>7.11%</u>	<u>\$287,781,000</u>	<u>7.66%</u>	<u>\$310,170,000</u>	<u>6.04%</u>	<u>\$232,310,000</u>	<u>3.78%</u>	<u>\$144,183,329</u>	<u>2.34%</u>	<u>\$86,764,874</u>	<u>0.69%</u>	<u>\$23,384,561</u>
Total Requirements	16.57%	\$680,631,000	15.71%	\$635,969,000	16.82%	\$681,087,000	15.08%	\$579,976,000	13.44%	\$512,588,278	12.10%	\$448,679,345	9.05%	\$306,708,713
Employee Contributions	6.00%	\$246,490,000	5.50%	\$222,737,000	5.50%	\$222,860,000	5.50%	\$211,704,000	5.51%	\$210,143,378	5.51%	\$204,456,479	5.00%	\$169,453,338
Employer Contributions	6.16%	\$252,854,000	5.68%	\$229,799,000	5.69%	\$230,325,000	5.69%	\$218,752,000	5.72%	\$218,013,895	5.23%	\$193,832,020	5.00%	\$169,453,338
Employer Add'l Cont.	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0
Direct State Funding	0.53%	\$21,510,000	0.47%	\$19,049,000	0.44%	\$17,948,000	0.50%	\$19,170,000	0.49%	\$18,819,110	0.51%	\$18,819,110	0.00%	\$0
Other Govt. Funding	0.00%	\$0	0.06%	\$2,500,000	0.06%	\$2,500,000	0.06%	\$2,500,000	0.07%	\$2,500,000	0.07%	\$2,500,000	0.00%	\$0
Administrative Assessment	<u>0.00%</u>	<u>\$0</u>												
Total Contributions	12.69%	\$520,854,000	11.71%	\$474,085,000	11.70%	\$473,633,000	11.75%	\$452,126,000	11.78%	\$449,476,383	11.31%	\$419,607,609	10.00%	\$338,906,676
Total Requirements	16.57%	\$680,631,000	15.71%	\$635,969,000	16.82%	\$681,087,000	15.08%	\$579,976,000	13.44%	\$512,588,278	12.10%	\$448,679,345	9.05%	\$306,708,713
Total Contributions	<u>12.69%</u>	<u>\$520,854,000</u>	<u>11.71%</u>	<u>\$474,085,000</u>	<u>11.70%</u>	<u>\$473,633,000</u>	<u>11.75%</u>	<u>\$452,126,000</u>	<u>11.78%</u>	<u>\$449,476,383</u>	<u>11.31%</u>	<u>\$419,607,609</u>	<u>10.00%</u>	<u>\$338,906,676</u>
Sufficiency/(Deficiency)	(3.88%)	(\$159,777,000)	(4.00%)	(\$161,884,000)	(5.12%)	(\$207,454,000)	(3.33%)	(\$127,850,000)	(1.65%)	(\$63,111,895)	(0.79%)	(\$29,071,736)	0.95%	\$32,197,963
Amortization Target Date	2037		2037		2037		2037		2037		2037		2020	
Actuary	Mercer		Mercer		Mercer		Mercer		Segal		Segal		Segal	

^Amortization of the unfunded actuarial accrued liability (UAAL) to the amortization target date.

* Reflects 2007 Asset Valuation Method change

Actuarial Valuation Data by Year

Teachers Retirement Association

(TRA)

	2004	2003	2002	2001	2000	1999	1998
Membership							
Active Members	72,008	71,916	71,690	71,097	70,508	68,613	68,247
Service Retirees	34,581	33,290	32,231	31,169	29,525	27,457	25,088
Disabilitants	589	558	551	518	509	476	454
Survivors	2,479	2,351	2,192	2,070	1,912	1,816	1,686
Deferred Retirees	10,767	9,304	8,680	7,959	7,375	7,020	6,356
Nonvested Former Members	<u>18,223</u>	<u>19,256</u>	<u>19,022</u>	<u>19,344</u>	<u>17,833</u>	<u>18,317</u>	<u>16,653</u>
Total Membership	138,647	136,675	134,366	132,157	127,662	123,699	118,484
Funded Status							
Accrued Liability	\$17,518,783,700	\$16,856,379,000	\$16,503,099,000	\$15,903,984,000	\$14,802,441,000	\$13,259,569,000	\$12,046,312,000
Current Assets	<u>\$17,519,909,350</u>	<u>\$17,384,179,000</u>	<u>\$17,378,994,000</u>	<u>\$16,834,024,000</u>	<u>\$15,573,151,000</u>	<u>\$14,011,247,000</u>	<u>\$12,727,546,000</u>
Unfunded Accrued Liability	(\$1,125,650)	(\$527,800,000)	(\$875,895,000)	(\$930,040,000)	(\$770,710,000)	(\$751,678,000)	(\$681,234,000)
Funding Ratio	100.01%	103.13%	105.31%	105.85%	105.21%	105.67%	105.66%
Financing Requirements							
Covered Payroll	\$3,206,759,440	\$3,163,057,000	\$3,040,422,000	\$2,937,962,000	\$2,813,696,000	\$2,692,960,000	\$2,569,368,000
Benefits Payable	\$1,008,410,471	\$978,466,000	\$946,344,000	\$861,788,000	\$755,036,000	\$620,938,000	\$533,851,000
Normal Cost	8.07% \$258,898,450	8.84% \$279,583,000	8.68% \$264,209,000	9.09% \$267,166,000	9.09% \$255,746,000	9.55% \$257,386,000	9.60% \$246,514,000
Administrative Expenses	0.39% \$12,506,362	0.43% \$13,601,000	0.44% \$13,378,000	0.46% \$13,515,000	0.30% \$8,441,000	0.31% \$8,348,000	0.22% \$5,653,000
Amortiz. of Unfunded Liab.^	<u>0.00%</u> \$0	<u>(0.90%)</u> <u>(\$28,468,000)</u>	<u>(1.55%)</u> <u>(\$47,127,000)</u>	<u>(1.70%)</u> <u>(\$49,945,000)</u>	<u>(1.47%)</u> <u>(\$41,361,000)</u>	<u>0.00%</u> \$0	<u>0.00%</u> \$0
Total Requirements	8.46% \$271,404,812	8.37% \$264,716,000	7.57% \$230,460,000	7.85% \$230,736,000	7.92% \$222,826,000	9.86% \$265,734,000	9.82% \$252,167,000
Employee Contributions	5.00% \$160,337,972	5.00% \$158,163,000	5.00% \$152,031,000	5.00% \$146,914,000	5.00% \$140,710,000	5.00% \$134,698,000	5.00% \$128,538,000
Employer Contributions	5.00% \$160,337,972	5.00% \$158,163,000	5.00% \$152,031,000	5.00% \$146,914,000	5.00% \$140,710,000	5.00% \$134,698,000	5.00% \$128,538,000
Employer Add'l Cont.	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Direct State Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Other Govt. Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Administrative Assessment	<u>0.00%</u> \$0	<u>0.00%</u> \$0	<u>0.00%</u> \$0	<u>0.00%</u> \$0	<u>0.00%</u> \$0	<u>0.00%</u> \$0	<u>0.00%</u> \$0
Total Contributions	10.00% \$320,675,944	10.00% \$316,326,000	10.00% \$304,062,000	10.00% \$293,828,000	10.00% \$281,420,000	10.00% \$269,396,000	10.00% \$257,076,000
Total Requirements	8.46% \$271,404,812	8.37% \$264,716,000	7.57% \$230,460,000	7.85% \$230,736,000	7.92% \$222,826,000	9.86% \$265,734,000	9.82% \$252,167,000
Total Contributions	<u>10.00%</u> <u>\$320,675,944</u>	<u>10.00%</u> <u>\$316,326,000</u>	<u>10.00%</u> <u>\$304,062,000</u>	<u>10.00%</u> <u>\$293,828,000</u>	<u>10.00%</u> <u>\$281,420,000</u>	<u>10.00%</u> <u>\$269,396,000</u>	<u>10.00%</u> <u>\$257,076,000</u>
Sufficiency/(Deficiency)	1.54% \$49,271,132	1.63% \$51,610,000	2.43% \$73,602,000	2.15% \$63,092,000	2.08% \$58,594,000	0.14% \$3,662,000	0.18% \$4,909,000
Amortization Target Date	2034	2033	2032	2031	2030	2020	2020
Actuary	Segal	Milliman USA	Milliman USA	Milliman USA	Milliman & Robertson	Milliman & Robertson	Milliman & Robertson

^Amortization of the unfunded actuarial accrued liability (UAAL) to the amortization target date.

Actuarial Valuation Data by Year

Teachers Retirement Association

(TRA)

	1997	1996	1995	1994	1993	1992	1991
Membership							
Active Members	68,554	68,490	67,558	66,514	65,268	65,557	65,093
Service Retirees	23,678	22,434	21,458	20,563	19,343	17,863	16,851
Disabilitants	425	409	379	345	354	297	280
Survivors	1,578	1,464	1,331	1,229	1,113	1,049	955
Deferred Retirees	6,356	5,767	5,103	4,499	4,030	3,548	3,134
Nonvested Former Members	<u>16,653</u>	<u>16,444</u>	<u>16,411</u>	<u>16,147</u>	<u>15,994</u>	<u>15,447</u>	<u>15,151</u>
Total Membership	117,244	115,008	112,240	109,297	106,102	103,761	101,464
Funded Status							
Accrued Liability	\$10,963,637,000	\$10,366,168,000	\$9,717,623,000	\$9,115,266,000	\$8,266,059,000	\$7,662,522,000	\$7,213,720,000
Current Assets	<u>\$11,103,759,000</u>	<u>\$9,541,221,000</u>	<u>\$8,348,124,000</u>	<u>\$7,611,935,000</u>	<u>\$7,045,937,000</u>	<u>\$6,324,733,000</u>	<u>\$5,614,924,000</u>
Unfunded Accrued Liability	(\$140,122,000)	\$824,947,000	\$1,369,499,000	\$1,503,331,000	\$1,220,122,000	\$1,337,789,000	\$1,598,796,000
Funding Ratio	101.28%	92.04%	85.91%	83.51%	85.24%	82.54%	77.84%
Financing Requirements							
Covered Payroll	\$2,475,599,000	\$2,391,385,000	\$2,325,059,000	\$2,235,636,000	\$2,156,000,000	\$2,112,401,000	\$2,044,754,000
Benefits Payable	\$427,587,000	\$378,073,000	\$338,857,000	\$309,036,000	\$256,630,000	\$227,067,000	\$200,415,000
Normal Cost	9.66% \$238,907,000	10.49% \$250,856,287	10.59% \$246,223,748	10.63% \$237,648,107	9.84% \$212,150,400	9.73% \$205,536,617	9.06% \$185,254,712
Administrative Expenses	0.19% \$4,704,000	0.16% \$3,826,216	0.16% \$3,720,094	0.15% \$3,353,454	0.15% \$3,234,000	0.40% \$8,449,604	0.37% \$7,565,590
Amortiz. of Unfunded Liab.^	<u>0.00%</u> \$0	<u>2.13%</u> \$50,936,501	<u>3.55%</u> \$82,539,595	<u>3.95%</u> \$88,307,622	<u>2.76%</u> \$59,505,600	<u>3.00%</u> \$63,372,030	<u>3.61%</u> \$73,815,619
Total Requirements	9.85% \$243,611,000	12.78% \$305,619,003	14.30% \$332,483,437	14.73% \$329,309,183	12.75% \$274,890,000	13.13% \$277,358,251	13.04% \$266,635,922
Employee Contributions	5.00% \$123,892,000	6.15% \$147,070,178	6.51% \$151,361,341	6.51% \$145,539,904	4.52% \$97,451,200	4.54% \$95,903,005	4.56% \$93,240,782
Employer Contributions	6.64% \$164,492,000	8.15% \$194,897,878	8.15% \$189,492,309	8.15% \$182,204,334	8.16% \$175,929,600	8.18% \$172,794,402	8.20% \$167,669,828
Employer Add'l Cont.	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Direct State Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Other Govt. Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Administrative Assessment	<u>0.00%</u> \$0						
Total Contributions	11.64% \$288,384,000	14.66% \$341,968,055	14.66% \$340,853,649	14.66% \$327,744,238	12.68% \$273,380,800	12.72% \$268,697,407	12.76% \$260,910,610
Total Requirements	9.85% \$243,611,000	12.78% \$305,619,003	14.30% \$332,483,437	14.73% \$329,309,183	12.75% \$274,890,000	13.13% \$275,003,000	13.04% \$266,635,922
Total Contributions	<u>11.64%</u> <u>\$288,384,000</u>	<u>14.66%</u> <u>\$341,968,055</u>	<u>14.66%</u> <u>\$340,853,649</u>	<u>14.66%</u> <u>\$327,744,238</u>	<u>12.68%</u> <u>\$273,380,800</u>	<u>12.72%</u> <u>\$273,637,000</u>	<u>12.76%</u> <u>\$260,910,610</u>
Sufficiency/(Deficiency)	1.79% \$44,773,000	1.88% \$36,349,052	0.36% \$8,370,212	(0.07%) (\$1,564,945)	(0.07%) (\$1,509,200)	(0.41%) (\$1,366,000)	(0.28%) (\$5,725,311)
Amortization Target Date	2020	2020	2020	2020	2020	2020	2020
Actuary	Milliman & Robertson						

^Amortization of the unfunded actuarial accrued liability (UAAL) to the amortization target date.

Actuarial Valuation Data by Year

Teachers Retirement Association

(TRA)

	1990	1989	1988	1987	1986	1985	1984
Membership							
Active Members	64,324	64,796	63,326	61,283	60,174	58,533	58,190
Service Retirees	16,133	15,406	14,974	14,582	13,695	12,798	11,885
Disabilitants	257	241	221	217	222	223	222
Survivors	929	903	869	830	808	781	737
Deferred Retirees	1,955	1,887	1,878	1,926	2,088	2,191	0
Nonvested Former Members	<u>15,356</u>	<u>14,205</u>	<u>13,310</u>	<u>13,106</u>	<u>12,957</u>	<u>13,628</u>	<u>0</u>
Total Membership	98,954	97,438	94,578	91,944	89,944	88,154	71,034
Funded Status							
Accrued Liability	\$6,611,074,000	\$6,249,413,000	\$5,413,782,000	\$5,000,785,000	\$4,539,359,000	\$4,166,116,000	\$3,716,432,337
Current Assets	<u>\$5,131,999,000</u>	<u>\$4,567,997,000</u>	<u>\$3,806,239,000</u>	<u>\$3,467,205,000</u>	<u>\$2,962,050,000</u>	<u>\$2,585,778,000</u>	<u>\$2,216,249,806</u>
Unfunded Accrued Liability	\$1,479,075,000	\$1,681,416,000	\$1,607,543,000	\$1,533,580,000	\$1,577,309,000	\$1,580,338,000	\$1,500,182,531
Funding Ratio	77.63%	73.09%	70.31%	69.33%	65.25%	62.07%	59.63%
Financing Requirements							
Covered Payroll	\$1,931,669,000	\$1,887,073,000	\$1,752,322,000	\$1,601,809,000	\$1,498,590,000	\$1,393,716,000	\$1,232,356,505
Benefits Payable	\$179,792,000	\$160,850,000	\$148,243,000	\$125,152,000	\$110,908,000	\$91,606,536	\$75,269,396
Normal Cost	9.24% \$178,486,216	8.30% \$156,627,059	7.77% \$136,155,419	7.82% \$125,261,464	7.96% \$119,287,764	7.94% \$110,661,050	8.66% \$106,722,073
Administrative Expenses	0.42% \$8,113,010	0.30% \$5,661,219	0.30% \$5,256,966	0.31% \$4,965,608	0.32% \$4,795,488	0.33% \$4,599,263	0.16% \$1,971,770
Amortiz. of Unfunded Liab.^	<u>3.45%</u> <u>\$66,642,581</u>	<u>3.92%</u> <u>\$73,973,262</u>	<u>5.22%</u> <u>\$91,471,208</u>	<u>5.23%</u> <u>\$83,774,611</u>	<u>5.54%</u> <u>\$83,021,886</u>	<u>5.76%</u> <u>\$80,278,042</u>	<u>5.73%</u> <u>\$70,614,028</u>
Total Requirements	13.11% \$253,241,806	12.52% \$236,261,540	13.29% \$232,883,594	13.36% \$214,001,682	13.82% \$207,105,138	14.03% \$195,538,355	14.55% \$179,307,871
Employee Contributions	4.58% \$88,470,440	4.59% \$86,616,651	4.60% \$80,606,812	4.62% \$74,003,576	4.64% \$69,534,576	4.68% \$65,225,909	4.71% \$58,043,991
Employer Contributions	8.22% \$158,783,192	9.07% \$171,157,521	9.09% \$159,286,070	9.09% \$145,604,438	9.13% \$136,821,267	9.15% \$127,525,014	4.71% \$58,043,991
Employer Add'l Cont.	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	4.48% \$55,209,571
Direct State Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Other Govt. Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Administrative Assessment	<u>0.00%</u> <u>\$0</u>						
Total Contributions	12.80% \$247,253,632	13.66% \$257,774,172	13.69% \$239,892,882	13.71% \$219,608,014	13.77% \$206,355,843	13.83% \$192,750,923	13.90% \$171,297,554
Total Requirements	13.11% \$253,241,806	12.52% \$236,261,540	13.29% \$232,883,594	13.36% \$214,001,682	13.82% \$207,105,138	14.03% \$195,538,355	14.55% \$179,307,871
Total Contributions	<u>12.80%</u> <u>\$247,253,632</u>	<u>13.66%</u> <u>\$257,774,172</u>	<u>13.69%</u> <u>\$239,892,882</u>	<u>13.71%</u> <u>\$219,608,014</u>	<u>13.77%</u> <u>\$206,355,843</u>	<u>13.83%</u> <u>\$192,750,923</u>	<u>13.90%</u> <u>\$171,297,554</u>
Sufficiency/(Deficiency)	(0.31%) (\$5,988,174)	1.14% \$21,512,632	0.40% \$7,009,288	0.35% \$5,606,331	(0.05%) (\$749,295)	(0.20%) (\$2,787,432)	(0.65%) (\$8,010,317)
Amortization Target Date	2020	2020	2009	2009	2009	2009	2009
Actuary	Wyatt	Wyatt	Wyatt	Wyatt	Wyatt	Wyatt	Flott

^Amortization of the unfunded actuarial accrued liability (UAAL) to the amortization target date.

Actuarial Valuation Data by Year

Teachers Retirement Association

(TRA)

	1983	1982	1981	1980	1979	1978	1977
Membership							
Active Members	57,831	63,573	65,189	65,423	64,360	62,683	63,967
Service Retirees	12,427	10,667	9,961	9,411	8,879	8,432	7,842
Disabilitants	0	214	199	200	179	155	137
Survivors	0	654	645	587	578	556	562
Deferred Retirees	0	0	0	0	0	0	0
Nonvested Former Members	<u>16,842</u>	<u>14,411</u>	<u>14,245</u>	<u>13,460</u>	<u>14,530</u>	<u>14,312</u>	<u>17,129</u>
Total Membership	87,100	89,519	90,239	89,081	88,526	86,138	89,637
Funded Status							
Accrued Liability	\$3,472,264,036	\$3,108,085,664	\$2,690,945,880	\$2,361,121,244	\$2,080,173,976	\$1,732,776,686	\$1,462,982,613
Current Assets	<u>\$1,983,579,211</u>	<u>\$1,710,750,595</u>	<u>\$1,462,538,605</u>	<u>\$1,232,115,128</u>	<u>\$1,048,516,231</u>	<u>\$940,345,339</u>	<u>\$822,410,185</u>
Unfunded Accrued Liability	\$1,488,684,825	\$1,397,335,069	\$1,228,407,275	\$1,129,006,116	\$1,031,657,745	\$792,431,347	\$640,572,428
Funding Ratio	57.13%	55.04%	54.35%	52.18%	50.41%	54.27%	56.21%
Financing Requirements							
Covered Payroll	\$1,146,613,563	\$1,129,420,339	\$1,040,186,471	\$971,670,262	\$899,989,326	\$845,898,496	\$802,761,084
Benefits Payable	\$62,177,636	\$52,692,963	\$43,664,862	\$38,399,281	\$34,612,214	\$31,452,536	\$27,383,954
Normal Cost	9.47% \$108,584,304	9.49% \$107,181,990	9.52% \$99,025,752	9.55% \$92,794,510	9.58% \$86,218,977	8.89% \$75,200,376	9.11% \$73,131,535
Administrative Expenses	0.13% \$1,490,598	0.12% \$1,355,304	0.10% \$1,040,186	0.10% \$971,670	0.11% \$989,988	0.11% \$930,488	0.10% \$802,761
Amortiz. of Unfunded Liab.^	<u>9.03%</u> <u>\$103,539,205</u>	<u>8.45%</u> <u>\$95,436,019</u>	<u>7.93%</u> <u>\$82,486,787</u>	<u>7.67%</u> <u>\$74,527,109</u>	<u>7.46%</u> <u>\$67,139,204</u>	<u>6.14%</u> <u>\$51,938,168</u>	<u>6.40%</u> <u>\$51,376,709</u>
Total Requirements	18.63% \$213,614,107	18.06% \$203,973,313	17.55% \$182,552,726	17.32% \$168,293,289	17.15% \$154,348,169	15.14% \$128,069,032	15.61% \$125,311,005
Employee Contributions	4.73% \$54,234,822	4.75% \$53,647,466	4.76% \$49,512,876	4.78% \$46,445,839	4.30% \$38,699,541	4.32% \$36,542,815	4.84% \$38,828,751
Employer Contributions	4.73% \$54,234,822	4.75% \$53,647,466	4.76% \$49,512,876	4.78% \$46,445,839	4.30% \$38,699,541	4.32% \$36,542,815	4.34% \$34,814,945
Employer Add'l Cont.	3.05% \$34,971,714	3.05% \$34,447,320	3.05% \$31,725,687	3.05% \$29,635,943	3.00% \$26,999,680	3.00% \$25,376,955	3.00% \$24,082,833
Direct State Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Other Govt. Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Administrative Assessment	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>				
Total Contributions	12.51% \$143,441,357	12.55% \$141,742,253	12.57% \$130,751,439	12.61% \$122,527,620	11.60% \$104,398,762	11.64% \$98,462,585	12.17% \$97,726,529
Total Requirements	18.63% \$213,614,107	18.06% \$203,973,313	17.55% \$182,552,726	17.32% \$168,293,289	17.15% \$154,348,169	15.14% \$128,069,032	15.61% \$125,311,005
Total Contributions	<u>12.51%</u> <u>\$143,441,357</u>	<u>12.55%</u> <u>\$141,742,253</u>	<u>12.57%</u> <u>\$130,751,439</u>	<u>12.61%</u> <u>\$122,527,620</u>	<u>11.60%</u> <u>\$104,398,762</u>	<u>11.64%</u> <u>\$98,462,585</u>	<u>12.17%</u> <u>\$97,726,529</u>
Sufficiency/(Deficiency)	(6.12%) (\$70,172,750)	(5.51%) (\$62,231,061)	(4.98%) (\$51,801,286)	(4.71%) (\$45,765,669)	(5.55%) (\$49,949,408)	(3.50%) (\$29,606,447)	(3.44%) (\$27,584,476)
Amortization Target Date	2009	2009	2009	2009	2009	1997	1997
Actuary	Flott	Flott	Flott	Flott	Flott	Flott	Flott

^Amortization of the unfunded actuarial accrued liability (UAAL) to the amortization target date.

Actuarial Valuation Data by Year

Teachers Retirement Association

(TRA)

	1976	1975	1974	1973	1972	1971	1970
Membership							
Active Members	64,088	60,457	59,528	59,286	58,192	57,616	53,425
Service Retirees	7,176	6,566	5,985	4,917	4,476	3,884	3,351
Disabilitants	120	97	80	74	69	66	47
Survivors	529	538	536	496	479	454	454
Deferred Retirees	0	0	0	0	0	0	0
Nonvested Former Members	<u>15,894</u>	<u>16,509</u>	<u>18,133</u>	<u>16,717</u>	<u>13,089</u>	<u>11,384</u>	<u>10,061</u>
Total Membership	87,807	84,167	84,262	81,490	76,305	73,404	67,338
Funded Status							
Accrued Liability	\$1,293,764,171	\$1,131,946,700	\$1,078,633,461	\$877,735,084	\$543,695,637	\$443,057,442	\$385,137,356
Current Assets	<u>\$695,640,890</u>	<u>\$606,495,423</u>	<u>\$538,893,416</u>	<u>\$468,427,531</u>	<u>\$389,407,363</u>	<u>\$324,917,889</u>	<u>\$269,479,109</u>
Unfunded Accrued Liability	\$598,123,281	\$525,451,277	\$539,740,045	\$409,307,553	\$154,288,274	\$118,139,553	\$115,658,247
Funding Ratio	53.77%	53.58%	49.96%	53.37%	71.62%	73.34%	69.97%
Financing Requirements							
Covered Payroll	\$752,040,857	\$663,335,223	\$598,421,409	\$583,341,059	\$549,393,938	\$482,642,693	\$431,774,990
Benefits Payable	\$23,029,011	\$19,828,513	\$16,715,896	\$10,655,203	\$8,359,031	\$7,139,254	\$5,700,849
Normal Cost	8.72% \$65,577,963	8.76% \$58,108,166	8.84% \$52,900,453	8.94% \$52,150,691	7.56% \$41,534,182	7.75% \$37,404,809	7.92% \$34,196,579
Administrative Expenses	0.10% \$752,041	0.11% \$729,669	0.10% \$598,421	0.09% \$525,007	0.10% \$549,394	0.10% \$482,643	0.09% \$388,597
Amortiz. of Unfunded Liab.^	<u>6.20%</u> <u>\$46,626,533</u>	<u>6.02%</u> <u>\$39,932,780</u>	<u>6.69%</u> <u>\$40,034,392</u>	<u>5.09%</u> <u>\$29,692,060</u>	<u>1.70%</u> <u>\$9,339,697</u>	<u>1.45%</u> <u>\$6,998,319</u>	<u>1.37%</u> <u>\$5,915,317</u>
Total Requirements	15.02% \$112,956,537	14.89% \$98,770,615	15.63% \$93,533,266	14.12% \$82,367,758	9.36% \$51,423,273	9.30% \$44,885,770	9.38% \$40,500,494
Employee Contributions	4.36% \$32,788,981	4.38% \$29,054,083	4.40% \$26,330,542	4.45% \$25,958,677	3.93% \$21,591,182	3.96% \$19,112,651	4.00% \$17,271,000
Employer Contributions	4.36% \$32,788,981	4.38% \$29,054,083	3.90% \$23,338,435	3.90% \$22,750,301	3.93% \$21,591,182	3.96% \$19,112,651	4.00% \$17,271,000
Employer Add'l Cont.	2.50% \$18,801,021	2.50% \$16,583,381	2.00% \$11,968,428	2.00% \$11,666,821	2.00% \$10,987,879	2.00% \$9,652,854	2.00% \$8,635,500
Direct State Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Other Govt. Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Administrative Assessment	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>
Total Contributions	11.22% \$84,378,984	11.26% \$74,691,546	10.30% \$61,637,405	10.35% \$60,375,800	9.86% \$54,170,242	9.92% \$47,878,155	10.00% \$43,177,499
Total Requirements	15.02% \$112,956,537	14.89% \$98,770,615	15.63% \$93,533,266	14.12% \$82,367,758	9.36% \$51,423,273	9.30% \$44,885,770	9.38% \$40,500,494
Total Contributions	<u>11.22%</u> <u>\$84,378,984</u>	<u>11.26%</u> <u>\$74,691,546</u>	<u>10.30%</u> <u>\$61,637,405</u>	<u>10.35%</u> <u>\$60,375,800</u>	<u>9.86%</u> <u>\$54,170,242</u>	<u>9.92%</u> <u>\$47,878,155</u>	<u>10.00%</u> <u>\$43,177,499</u>
Sufficiency/(Deficiency)	(3.80%) (\$28,577,553)	(3.63%) (\$24,079,069)	(5.33%) (\$31,895,861)	(3.77%) (\$21,991,958)	0.50% \$2,746,970	0.62% \$2,992,385	0.62% \$2,677,005
Amortization Target Date	1997	1997	1997	1997	1997	1997	1997
Actuary	Flott	Flott	Flott	Flott	Flott	Flott	Flott

^Amortization of the unfunded actuarial accrued liability (UAAL) to the amortization target date.

Actuarial Valuation Data by Year

Teachers Retirement Association

(TRA)

	1969	1968	1967	1966	1965	1964	1959
Membership							
Active Members	50,152	46,055	43,029	39,710	34,604	33,386	24,680
Service Retirees	2,778	2,505	2,279	2,149	2,022	1,914	1,524
Disabilitants	47	39	31	28	21	15	0
Survivors	439	406	373	357	343	315	0
Deferred Retirees	0	0	0	0	0	0	0
Nonvested Former Members	<u>7,945</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>3,683</u>	<u>3,712</u>
Total Membership	61,361	49,005	45,712	42,244	36,990	39,313	29,916
Funded Status							
Accrued Liability	\$319,201,924	\$240,558,837	\$228,026,093	\$205,043,514	\$188,452,999	\$138,888,318	\$128,344,426
Current Assets	<u>\$224,941,093</u>	<u>\$192,196,688</u>	<u>\$164,155,966</u>	<u>\$142,506,850</u>	<u>\$123,148,877</u>	<u>\$102,813,388</u>	<u>\$56,661,932</u>
Unfunded Accrued Liability	\$94,260,831	\$48,362,149	\$63,870,127	\$62,536,664	\$65,304,122	\$36,074,930	\$71,682,494
Funding Ratio	70.47%	79.90%	71.99%	69.50%	65.35%	74.03%	44.15%
Financing Requirements							
Covered Payroll	\$386,300,000	\$320,000,000	\$277,000,000	\$220,000,000	\$228,000,000	\$105,230,561	\$109,200,000
Benefits Payable	\$4,370,606	\$3,638,231	\$3,719,568	\$3,163,455	\$2,959,696	\$2,755,809	\$1,600,000
Normal Cost	8.23% \$31,792,490	7.20% \$23,040,000	7.34% \$20,331,800	7.53% \$16,566,000	7.61% \$17,350,800	8.05% \$8,471,060	10.27% \$11,214,840
Administrative Expenses	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Amortiz. of Unfunded Liab.^	<u>1.33%</u> <u>\$5,137,790</u>	<u>0.69%</u> <u>\$2,208,000</u>	<u>0.95%</u> <u>\$2,631,500</u>	<u>1.40%</u> <u>\$3,080,000</u>	<u>1.40%</u> <u>\$3,192,000</u>	<u>1.30%</u> <u>\$1,367,997</u>	<u>2.40%</u> <u>\$2,620,800</u>
Total Requirements	9.56% \$36,930,280	7.89% \$25,248,000	8.29% \$22,963,300	8.93% \$19,646,000	9.01% \$20,542,800	9.35% \$9,839,057	12.67% \$13,835,640
Employee Contributions	4.11% \$15,876,930	3.60% \$11,520,000	3.67% \$10,165,900	3.76% \$8,272,000	3.80% \$8,664,000	4.03% \$4,240,792	5.14% \$5,607,420
Employer Contributions	4.11% \$15,876,930	3.60% \$11,520,000	3.67% \$10,165,900	3.76% \$8,272,000	3.80% \$8,664,000	4.03% \$4,240,792	5.14% \$5,607,420
Employer Add'l Cont.	2.00% \$7,726,000	1.50% \$4,800,000	1.39% \$3,850,300	1.37% \$3,014,000	1.37% \$3,123,600	1.33% \$1,399,566	0.00% \$0
Direct State Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Other Govt. Funding	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0	0.00% \$0
Administrative Assessment	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>	<u>0.00%</u> <u>\$0</u>
Total Contributions	10.22% \$39,479,860	8.70% \$27,840,000	8.73% \$24,182,100	8.89% \$19,558,000	8.97% \$20,451,600	9.39% \$9,881,150	10.27% \$11,214,840
Total Requirements	9.56% \$36,930,280	7.89% \$25,248,000	8.29% \$22,963,300	8.93% \$19,646,000	9.01% \$20,542,800	9.35% \$9,839,057	12.67% \$13,835,640
Total Contributions	<u>10.22%</u> <u>\$39,479,860</u>	<u>8.70%</u> <u>\$27,840,000</u>	<u>8.73%</u> <u>\$24,182,100</u>	<u>8.89%</u> <u>\$19,558,000</u>	<u>8.97%</u> <u>\$20,451,600</u>	<u>9.39%</u> <u>\$9,881,150</u>	<u>10.27%</u> <u>\$11,214,840</u>
Sufficiency/(Deficiency)	0.66% \$2,549,580	0.81% \$2,592,000	0.44% \$1,218,800	(0.04%) (\$88,000)	(0.04%) (\$91,200)	0.04% \$42,092	(2.40%) (\$2,620,800)
Amortization Target Date	1997	1997	1997	1997	1997	1997	1997
Actuary	Flott	Flott	Flott	Brown	Brown	Brown	Brown

^Amortization of the unfunded actuarial accrued liability (UAAL) to the amortization target date.

Actuarial Valuation Data by Year

Teachers Retirement Association

(TRA)

	1958	
<u>Membership</u>		
Active Members		22,015
Service Retirees		1,443
Disabilitants		0
Survivors		0
Deferred Retirees		0
Nonvested Former Members		<u>2,981</u>
Total Membership		26,439
<u>Funded Status</u>		
Accrued Liability		\$111,135,545
Current Assets		<u>\$38,697,202</u>
Unfunded Accrued Liability		\$72,438,343
Funding Ratio	34.82%	
<u>Financing Requirements</u>		
Covered Payroll		\$94,300,000
Benefits Payable		\$1,500,000
Normal Cost	12.00%	\$11,316,000
Administrative Expenses	0.00%	\$0
Amortiz. of Unfunded Liab.^	<u>2.60%</u>	<u>\$2,451,800</u>
Total Requirements	14.60%	\$13,767,800
Employee Contributions	6.00%	\$5,658,000
Employer Contributions	6.00%	\$5,658,000
Employer Add'l Cont.	0.00%	\$0
Direct State Funding	0.00%	\$0
Other Govt. Funding	0.00%	\$0
Administrative Assessment	<u>0.00%</u>	<u>\$0</u>
Total Contributions	12.00%	\$11,316,000
Total Requirements	14.60%	\$13,767,800
Total Contributions	<u>12.00%</u>	<u>\$11,316,000</u>
Sufficiency/(Deficiency)	(2.60%)	(\$2,451,800)
Amortization Target Date	1997	
Actuary	Brown	

^Amortization of the unfunded actuarial accrued liability (UAAL) to the amortization target date.